

Measuring Intercountry Expenditures for Medical Care

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APPREHENSION in social security circles throughout the world about the rise in medical care costs and concern of the World Health Organization about adequacy of expenditures for health have focused attention on measurement of intercountry price variations.

In 1959, the International Labor Office published a study, initiated some 6 years earlier, on the comparative costs of medical care in a selected group of countries, including countries in Europe and the Americas. One conclusion of this study was that the costs of medical care per person in the population tended to be in the order of 1¾ to 2 percent of average national income, at factor cost, per economically active person, whatever the country or the method of providing care (1).

During the same period, the World Health Organization turned its attention to examination of comparative expenditures for public health in the context of all health care (2,3). Preliminary investigation of the health care activities suggested about the same conclusion as that found by the ILO, namely, that despite differences in programs, health status of the populations, methods of organization of care, and methods of payment, almost uniformly 4 percent of gross national product was devoted to health.

This type of ratio obscures rather than clarifies the problem of use of resources for health care. Unless research is done on the components of health expenditures; on quantity

variations, utilization rates, and numbers of health personnel; on quality variations, and on price differences, we will gain little by way of a guide toward an understanding of the consequence of the choices before us in meeting the health problems of the United States and helping to meet those in the underdeveloped countries of the world.

Many things suggest sizable variations in price of health care in the different countries of the world and a differential between health care prices and the general price level of all commodities and services. There are good reasons for expecting the price level in various countries to differ significantly among commodities and services. Apart from indirect tax levies, subsidies, and selective price controls, differences in production processes and the degree of capital intensity or labor intensity of the production affect these relative prices. Health care is largely a personal service, in which labor is the largest element of cost. In the United States high prices are associated with products requiring extensive labor services, and relatively low prices are associated with products requiring much capital. In many nations, these tendencies are reversed. If the relative price of health personnel is lower in many nations than in the United States, the same ratio of health expenditures to gross national product here and abroad must mean either a larger volume of care or a higher quality of care per equivalent income abroad than in the United States.

Furthermore, prices of medical care in nations which pay their health practitioners on a fee-for-service basis may be expected to be higher than prices in countries using a per capita or sal-

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aried arrangement. If, despite differences in methods of remuneration, expenditures are the same proportion of total resources, again there still must be compensating volume or quality differences. On a somewhat different plane, we know of these price differences through the number of our foreign visitors who return to their country of origin when illness strikes because of relative differences in price of care.

A beginning of research on comparative prices has been made in the Gilbert studies on international comparisons of national products (4, 5). His studies and similar studies on international comparisons of gross product estimates have revived, in a sense, the original purposes of price indexes, that is, to show differences in the value of money in the different countries. While there have been many studies over a long period and by very eminent economic scholars, including Marshall, Jevons, Mitchell, and Keynes, on construction of price indexes for measuring comparative general price levels, very little attention has been directed to comparisons of prices of health care and of its component products and services.

The Gilbert studies include health care whether provided publicly or privately as an item of personal consumption in the gross expenditure accounts of the countries studied. The procedure, in brief, followed that of defining a market basket of health goods and services, of ascertaining quantities and prices of the items in this basket in one country compared with quantities and prices in another, and of obtaining the weighted average for the European countries compared with the United States. For purposes of this analysis, European market prices have been converted into dollars at the purchasing power equivalents for consumption of all commodities and services and then expressed as a ratio of United States market prices. For purposes of illustrating the procedure, we assume that "health care" in the United States costs \$1, and in a foreign currency, five currency units. At the same time it requires 10 units of the foreign currency to buy the same amount of all goods and services combined as could be bought with \$1 in the United States. In this example, then, "health care" would be one-half as expensive in the European country as in the United States.

The findings indicate:

- Health care was relatively cheaper in the eight countries studied than in the United States. Taking prices in the United States as 100, the relative market prices of health services and goods in these countries in 1950 were:

Denmark.....	59	France.....	61
United Kingdom....	72	Netherlands.....	63
Norway.....	55	Germany.....	55
Belgium.....	71	Italy.....	54

SOURCE: Reference 4, p. 62.

- Health care, when uniformly valued at average European prices, was a smaller part of consumption of commodities and services in the United States than in most European countries. Health expenditures valued in this way accounted for 3.4 percent of consumption in the United States, 5.1 percent in Norway, and 5.5 percent in Western Germany.

- The per capita gross product represented by health care items was higher in the United States than in other countries studied. At the United States relative price weights in dollars, the per capita gross product represented by health care items was \$71 in the United States compared with Norway's \$60, the highest figure for the European nations. For the eight countries studied, relative price weights in dollars for gross consumption of health goods and services in 1950 were:

Denmark.....	\$54	France.....	\$40
United Kingdom....	49	Netherlands.....	37
Norway.....	60	Germany.....	40
Belgium.....	47	Italy.....	7

SOURCE: Reference 4, p. 75.

- Variations in quantities of health care consumed were largely explained by differences in total consumption in the countries or by differences in price. Eighty-nine percent of the variation was explainable by either total consumption or price differences.

- The consumption elasticity for health care was less than unity, suggesting, in general, that the proportion of expenditures for health care declines as income increases.

In terms of assessing the meaning of expenditure differences and similarities, the Gilbert type of study is far more useful than comparisons among nations based wholly or in large part on some ratio to gross product. It is more

useful than the more refined types of ratios, such as the ratio of health expenditures per family to some representative wage level or of health expenditures per capita to income per wage earner.

The indexes of the Gilbert studies are also subject to criticism apart from problems of defining a reasonably equivalent market basket of health care. The definition of health expenditures lacked specificity; estimates of quantities and rates that took the place of comparable basic data were very crudely designed. Health products and services in a global study of gross national product, while significant, are a relatively small part of the total. Given problems of penetrating through much incomparable data on outlays, in the aggregate and by type, of effectively using utilization rates for health services as measures of quantity, and of applying such rudimentary information as exists on quality differences, a more precise type of analysis is probably outside the feasible time schedule of the economist working on a general economic problem, such as comparisons of gross national product. What is required is a careful formulation of an equivalent market basket of health services and goods in European countries and in similar industrial nations and a collection of data on quantity, quality, and price of these services. The International Social Security Association has made a small beginning on at least part of the problem (6, 7). However, much remains to be done. The work carried forward by those in the health field can then be used by the generalist as part of his analysis of aggregate consumption and purchasing power equivalents.

When we turn our attention to the problem of prices and quantities of health services in the underdeveloped countries of the world, the complexities of measurement are increased many times over. Industrial nations have brought the infectious and contagious diseases under an important and impressive measure of control. Their primary health problems lie in the areas of curative medicine and chronic diseases. The underdeveloped nations, however, are still plagued by mass contagious and infectious diseases. In many of these nations life expectancy at birth is still close to 30 years, whereas in the industrial nations, life expectancy is more

than twice as long, approaching 70 years. We need to carefully assess expenditure items which are equivalent, given the wide differences in mortality and morbidity in the industrial and nonindustrial nations. The health measures required for control of mass diseases are generally less costly and extensive than curative medicine. Drugs and sanitation lie at the core of public health in underdeveloped nations. While marked improvement in sanitation can be achieved by using the resources within the country, sanitation programs require considerable capital in countries in which investment funds are scarce. Drugs, moreover, often are not produced within the nations subject to these infectious and contagious diseases, and purchases are made at world market prices.

Summary

For the industrially developed countries, a reasonably equivalent "market basket" or package of health services and their commodity components can be defined and priced. But it will take a carefully designed study not only of prices of health services and commodities but of general price levels to yield useful results. For the nations emerging into an industrial world, a proper base for comparisons of health prices requires definition. Certainly, a beginning can be made by formulating a "package of preventive public health programs" to control the mass diseases and by pricing these services.

Much additional work remains to be done to develop intercountry comparisons of use of health services and of prices of these goods and services before expenditure differences can be assessed. Along with such studies a careful collection of data on expenditures for health care in the different countries is needed. The World Health Organization has undertaken to collect these data in conformance with carefully worked through definitions.

Two methods have been used to make intercountry comparisons of the economic resources devoted to health care. Percentages of gross national product represented by health expenditures have been computed to show the shares of economic resources devoted to health in a number of countries. The estimates of gross na-

tional product and the health services component of these products have been adjusted for price differences before computing shares in the different countries.

The Gilbert study, which follows the second of these methods, points up differences among nations in the shares of economic resources devoted to health; the approach of the International Labor Office and the World Health Organization suggests uniform allocation of resources for health.

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National Dental Health Center

The National Dental Health Center, opened by the Public Health Service in San Francisco on July 1, 1961, provides facilities for applied research in prevention and control of dental diseases and for training in application of research findings.

Activities of the new center are intended to reduce the timelag between the discovery of new knowledge and techniques and their subsequent use in dental health programs.

Among initial projects will be the investigation of the epidemiology of periodontal disease and a study of factors associated with the occurrence of cleft lip and palate. Demonstrations and training courses will be aimed at furthering the skills, knowledge, and information of State and local health agency personnel, dental educators, and private practitioners.

The center, located on the grounds of the Public Health Service Hospital and operated by the Division of Dental Public Health and Resources, will have a staff of 20 for the first year. Dr. George Nevitt is director of the center and its training activities. Dr. John Green heads the epidemiology program.